



National Transportation Safety Board Aviation Accident Final Report

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| Location: | ENGLEWOOD, CO | Accident Number: | FTW95LA316 |
| Date & Time: | 07/24/1995, 1336 MDT | Registration: | N480UP |
| Aircraft: | Gulfstream GV-1 | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | N/A |
| Flight Conducted Under: | Part 91: General Aviation - Business | | |

Analysis

DURING LANDING ROLL/TAXI, FOLLOWING A NORMAL FLIGHT AND LANDING, THE LEFT MAIN LANDING GEAR STRUT DISCONNECTED AND THE STRUT PENETRATED THE LANDING GEAR FAIRING BOX.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE LEFT MAIN LANDING GEAR STRUT ATTACHMENT FOR UNDETERMINED REASONS.

Factual Information

On July 24, 1995, at 1336 mountain daylight time, a Gulfstream Aerospace GV-1, N480UP, sustained substantial damage on landing at Centennial Airport, Englewood, Colorado, when part of the left main landing gear penetrated the wing during landing/taxi. The two crew members and seven passengers were not injured. Visual meteorological conditions prevailed and an IFR flight plan was filed for this business flight which originated in Allentown, Pennsylvania (PA).

According to the crew, the flight from Allentown, PA to their destination was uneventful. They were given a visual approach to runway 33 at Centennial Airport and the landing and taxi appeared normal; however, they noted a slight list to the left during taxi. The aircraft was parked at the AMR Combs passenger facility and the passengers disembarked normally. During post flight, the crew found damage to the left main landing gear assembly. Items incurring damage were the tires, shock strut, cables/wiring, left gear fairing box, and door fairing. It was found that the left shock strut had penetrated the gear fairing box aft of the gear well.

The left strut and right knuckle and pins were tested at the facilities of Applied Technical Services, Incorporated, Marietta, Georgia. Their report is attached and states that the most likely failure scenario is that the through bolt loosened and the pin fell out allowing the strut to move abnormal to its design function. The left knuckle and pins were not recovered.

A copy of the Applied Technical Services report was forwarded to the Board's Materials Laboratory for review. The review concurred with the report.

Aircraft and Owner/Operator Information

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| Aircraft Make: | Gulfstream | Registration: | N480UP |
| Model/Series: | GV-1 GV-1 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | Transport | Serial Number: | 1054 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 18 |
| Date/Type of Last Inspection: | 03/31/1995, Continuous Airworthiness | Certified Max Gross Wt.: | 73200 lbs |
| Time Since Last Inspection: | 194 Hours | Engines: | 2 Turbo Jet |
| Airframe Total Time: | 3380 Hours | Engine Manufacturer: | Rolls-Royce |
| ELT: | Installed, not activated | Engine Model/Series: | TAY 611-8 |
| Registered Owner: | UNION PACIFIC AVIATION, CO. | Rated Power: | 14000 lbs |
| Operator: | UNION PACIFIC AVIATION, CO. | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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|----------------------------------|-------------------------|---|------------------|
| Conditions at Accident Site: | Visual Conditions | Condition of Light: | Day |
| Observation Facility, Elevation: | APA, 5883 ft msl | Distance from Accident Site: | 1 Nautical Miles |
| Observation Time: | 1347 MDT | Direction from Accident Site: | 90° |
| Lowest Cloud Condition: | Scattered / 8000 ft agl | Visibility | 30 Miles |
| Lowest Ceiling: | None / 0 ft agl | Visibility (RVR): | 0 ft |
| Wind Speed/Gusts: | 5 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 360° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 30 inches Hg | Temperature/Dew Point: | 28° C / 4° C |
| Precipitation and Obscuration: | | | |
| Departure Point: | ALLENTOWN, PA (ABE) | Type of Flight Plan Filed: | IFR |
| Destination: | (APA) | Type of Clearance: | IFR |
| Departure Time: | 0958 MDT | Type of Airspace: | Class B |

Airport Information

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|----------------------|--------------------------|---------------------------|----------------------------|
| Airport: | CENTENNIAL AIRPORT (APA) | Runway Surface Type: | Asphalt |
| Airport Elevation: | 5883 ft | Runway Surface Condition: | Dry |
| Runway Used: | 33 | IFR Approach: | None |
| Runway Length/Width: | 10002 ft / 101 ft | VFR Approach/Landing: | Full Stop; Traffic Pattern |

Wreckage and Impact Information

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|---------------------|-----|----------------------|-------------|
| Crew Injuries: | N/A | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | N/A | Latitude, Longitude: | |

Administrative Information

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|-----------------------------------|--|--------------|------------|
| Investigator In Charge (IIC): | NORMAN F WIEMEYER | Report Date: | 12/19/1995 |
| Additional Participating Persons: | JEFF GRAVES; DENVER, CO | | |
| Publish Date: | | | |
| Investigation Docket: | NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ . | | |

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).